

Abstract

[1074] In one embodiment of the present invention, a magnetic lens is provided that can generate a substantially constant amount of average heat power over a pre-selected range of resultant magnetic field strengths. The lens is configured to do this with multiple, asymmetric (different turns) coil sections that can produce a desired range of field strengths, and at the same time, maintain a sufficiently constant temperature signature when the average total power is maintained constant thereby eliminating unreasonable delays in lens operation when the resultant field strength is changed. The asymmetric lens structure allows for the smaller coil to be made with less relative inductance thereby making it more responsive and amenable for an AC drive signal and thus dynamic focusing applications if desired. Thus, a magnetic lens is now provided that can produce a range of magnetic beam-focusing field strengths, implement dynamic focusing, and not impose unreasonable delay for thermal stabilization between changes in magnetic field strength.